

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
MISSISSIPPI DRAINAGE—continued					
Beaver: Beaver Falls, Pa. ....	11	14	17	13.1	1927 Dec. 14.
Shenango: Sharon, Pa. ....	9	1	3	12.3	Dec. 2.
		14	17	10.8	Dec. 14.
Muskingum:					
McConnellsville, Ohio. ....	22	15	19	24.3	Dec. 17.
Beverly, Ohio. ....	25	16	16	25.1	Dec. 16.
Marietta, Ohio. ....	28	15	19	34.5	Dec. 17.
Tuscarawas:					
Gnadenhutten, Ohio. ....	9	(?)	5	14.2	Dec. 2-3.
		13	20	15.4	Dec. 17.
Coshocton, Ohio. ....	8	1	4	14.7	Dec. 2.
		14	19	14.4	Dec. 16.
Walhonding: Walhonding, Ohio. ....	8		3	14.1	Dec. 1.
Scioto:					
Larue, Ohio. ....	11	1	2	14.1	Do.
		14	15	14.4	Dec. 14.
Prospect, Ohio. ....	10	1	3	12.9	Dec. 2.
		15	17	12.7	Dec. 15.
Bellpoint, Ohio. ....	9	1	1	9.7	Dec. 1.
Circleville, Ohio. ....	10	2	3	13.5	Dec. 3.
		14	17	14.0	Dec. 15.
Chillicothe, Ohio. ....	16	3	4	17.6	Dec. 3.
		15	17	19.1	Dec. 16.
Olentangy: Delaware, Ohio. ....	9		1	12.9	Dec. 1.
Little Miami: Kings Mills, Ohio. ....	17	14	14	20.7	Dec. 14.
Wabash:					
Lafayette, Ind. ....	11	(?)	10	21.9	Dec. 2.
		14	18	18.8	Dec. 16.
Covington, Ind. ....	16	(?)	20	25.0	Dec. 4.
Terre Haute, Ind. ....	16	2	21	21.2	Dec. 5.
Vincennes, Ind. ....	14	6	25	19.1	Dec. 9.
Mount Carmel, Ill. ....	16	3	25	22.1	Dec. 9, 17.
Tippecanoe: Norway, Ind. ....	6	(?)	26	6.5	Dec. 1, 2, 7,
		29	29	6.1	14, 16, 29.
White: Decker, Ind. ....	18	5	10	19.3	Dec. 5-9.
		15	23	20.9	Dec. 21-22.
White, East Fork:					
Seymour, Ind. ....	10	1	3	12.5	Dec. 2.
		15	15	11.5	Dec. 15.
Williams, Ind. ....	10	18	18	10.5	Dec. 18.
Shoals, Ind. ....	20	6	6	20.4	Dec. 6.
		18	20	21.2	Dec. 19.
White, West Fork:					
Eliston, Ind. ....	19	3	4	19.7	Dec. 4.
		15	17	21.0	Dec. 17.
Edwardsport, Ind. ....	15	2	6	17.0	Dec. 5.
		15	20	17.5	Dec. 18-19.
Elk: Fayetteville, Tenn. ....	14	31	31	16.3	Dec. 31.
Illinois:					
Morris, Ill. ....	13	(?)	5	14.7	Dec. 1.
		8	17	15.4	Dec. 15-16.
Peru, Ill. ....	14	(?)	(?)	20.0	Dec. 18-19.
Henry, Ill. ....	10	(?)	(?)	14.4	Dec. 17-18.
Peoria, Ill. ....	18	2	(?)	20.9	Dec. 18-20.
Havana, Ill. ....	14	1	(?)	18.1	Dec. 19.
Beardstown, Ill. ....	14	2	(?)	19.3	Dec. 16-18.
Pearl, Ill. ....	12	4	(?)	15.8	Dec. 20.
Meramec:					
Pacific, Mo. ....	11	1	4	15.5	Dec. 3.
Valley Park, Mo. ....	14	1	4	16.8	Do.
		15	17	16.9	Dec. 16.
Bourbeuse: Union, Mo. ....	12	2	3	13.9	Dec. 3.
St. Francis: St. Francis, Ark. ....	17	17	28	26.1	Dec. 19.
Arkansas:					
Dardanelle, Ark. ....	20	14	14	23.8	Dec. 14.
Morrilton, Ark. ....	20	14	14	20.0	Do.
Yancopin, Ark. ....	29	17	17	29.1	Dec. 17.
Petit Jean: Danville, Ark. ....	20	15	17	22.7	Dec. 16.
White:					
Calico Rock, Ark. ....	18	14	17	39.6	Dec. 14.
Batesville, Ark. ....	23	14	18	37.6	Dec. 15.
Newport, Ark. ....	26	16	21	29.7	Dec. 18.
Georgetown, Ark. ....	22	19	29	25.4	Dec. 22.
DeValls Bluff, Ark. ....	24	22	29	25.7	Dec. 24.
Buffalo: Gilbert, Ark. ....	30	14	14	38.0	Dec. 14.
Black:					
Leeper, Mo. ....	11	14	14	15.5	Do.
Williamsville, Mo. ....	11	14	15	16.0	Do.
Poplar Bluff, Mo. ....	14	14	17	18.1	Dec. 15.
Corning, Ark. ....	11	15	28	15.1	Dec. 19.
		31	31	11.0	Dec. 31.
Black Rock, Ark. ....	14	14	(?)	25.3	Dec. 15.
WEST GULF DRAINAGE					
Trinity: Trinidad, Tex. ....	28	19	24	28.5	Dec. 21-22.
PACIFIC DRAINAGE					
Columbia: Vancouver, Wash. ....	15	(?)	2	16.3	Nov. 29.
Willamette:					
Harrisburg, Oreg. ....	7	(?)	4		Do.
Portland, Oreg. ....	15	(?)	3	17.5	Do.
Willamette, Coast Fork: Saginaw, Oreg. ....	5	13	15	5.3	Dec. 14-15.
		30	(?)	5.4	Dec. 31.

<sup>1</sup> Continued from last month.

<sup>2</sup> Continued at end of month.

# MEAN LAKE LEVELS DURING DECEMBER, 1927

By UNITED STATES LAKE SURVEY

[Detroit, Mich., January 5, 1928]

The following data are reported in the Notice to Mariners of the above date:

Data	Lakes <sup>1</sup>			
	Superior	Michigan and Huron	Erie	Ontario
Mean level during December, 1927:				
Above mean sea level at New York—	Feet	Feet	Feet	Feet
Above or below—	602.39	578.82	571.51	245.65
Mean stage of November, 1927...	-0.15	-0.09	+0.40	+0.80
Mean stage of December, 1926...	+0.75	+0.57	+0.05	+0.23
Average stage for December, last 10 years...	+0.52	-0.56	-0.02	+0.45
Highest recorded December stage...	-0.74	-3.76	-2.02	-1.86
Lowest recorded December stage...	+2.14	+1.28	+1.12	+2.22
Average departure (since 1860) of the December level from the November level...	-0.27	-0.22	-0.08	-0.09

<sup>1</sup> Lake St. Clair's level: In December, 1927, 574.13 feet.

## EFFECT OF WEATHER ON CROPS AND FARMING OPERATIONS, DECEMBER, 1927

By J. B. KINCER

*General summary.*—The outstanding favorable feature of the weather during the first decade of December was the effective relief of the droughty conditions in the southeastern States. Generous to heavy rains there bountifully supplied the soil with needed moisture, which, together with the generally mild temperatures, brought a marked improvement to the agricultural situation. In the trans-Mississippi States cool weather brought frost nearly to the Gulf coast with more or less damage to tender vegetation. Early in the period farm work made good advance in the more eastern States and upper Ohio Valley, but toward its close frequent precipitation and severe wintry conditions over large areas of the country westward to the Rocky Mountains were unfavorable, with little farm work accomplished.

During the second decade frequent rains, followed by cold, windy, disagreeable weather in most sections east of the Mississippi River, made conditions generally unfavorable for outside operations and very little activity on farms was reported. Over the Central and Northern States to the westward the continued abnormally low temperatures and rather severe snowstorms in northern districts were also unfavorable for agricultural interests.

During the last decade in the more northern districts east of the Mississippi River generally ample sunshine, absence of appreciable precipitation, and the frozen ground enabled corn husking to make excellent advance, with much progress reported in other sections to the westward. The lack of adequate snow cover over Central States caused some apprehension during the cold weather. Much hog killing was done in southern areas. In a large part of the Northeast there was very little farm activity, but from the Great Lakes westward there was a revival of outdoor operations, attending the reaction to more favorable weather.

*Small grains.*—At the beginning of the month grain fields were mostly protected by a snow cover in the northeast as far south as the Potomac Valley, in the Lake region, and in most sections between that region and the Rocky Mountains; the latter part of the first

decade, however, found most of the Winter Wheat Belt bare of snow with high winds in the central-northern portion of the belt contributing to the removal of the cover. Some heaving was reported in sections of the Lake region and cool weather checked growth in Southern States, but advance was satisfactory in most areas, except that continued dry weather over considerable sections of the southern Great Plains was detrimental.

During the second decade further unseasonably cold weather occurred over the Winter Wheat Belt, but in all except the more western portion the unusually favorable growing conditions during the fall had permitted the wheat plants to establish a good root system. In the more western portions of the belt the persistent drought and low temperatures were decidedly unfavorable.

During the last decade continued dryness in the southwestern Great Plains was unfavorable for winter wheat and the absence of adequate snow cover caused considerable apprehension in the upper Ohio Valley, but grains in general continued in mostly satisfactory condition.

*Corn and cotton.*—Husking corn made good advance quite generally the first part of the first decade rather generally west of the Mississippi River and fairly good progress was made in eastern portions. During the second decade husking and cribbing was delayed or entirely suspended over the interior valleys because of stormy, wintry conditions. Excellent weather for husking prevailed during the last decade in those areas where this work had not been completed. Weather conditions during the first decade were favorable for cleaning up the cotton crop in the northwestern portion of the belt, but during the second decade little progress was made, due to inclement weather; practically all cotton remaining

in the fields in Tennessee was picked during the last decade.

*Miscellaneous.*—The snow cover that obtained over Northern States during the first decade made much yard feeding of livestock necessary in the northern Great Plains. The colder weather during the second decade was very favorable for hog killing in southern sections. The range was generally snow-covered in most northern Rocky Mountain districts with new snow of benefit in other areas. There was a lack of adequate cover for meadows in the Lake region during the last decade; most of the ranges were closed in the northern Rockies. More snow was needed in lower portions of Colorado, but moisture was ample on most ranges of the Western States. Livestock continued good throughout the month, although some suffering with small losses was reported during the cold weather; feeding was general.

Rains over the Southeast improved winter truck the first part of the month, but the cold weather that overspread these sections during the latter part caused considerable injury to tender vegetation, although hardy truck was generally unharmed. Tobacco stripping was favored in most sections, although it was too dry for this work in Kentucky at the close of the month. Grinding sugar cane progressed favorably in Louisiana during the month; the freezes killed back cane shoots from early stubble. Citrus, as a whole, was uninjured by frost in Florida, and the showers and cooler weather were favorable. There was some firing necessary in California groves, but there was no serious injury. At the close of the month a severe cold wave was overspreading the Southeast, and this did much damage to truck and citrus at the beginning of January.

## WEATHER OF THE ATLANTIC AND PACIFIC OCEANS

### NORTH ATLANTIC OCEAN

By F. A. YOUNG

The weather over the North Atlantic for December was unusually severe, even for this month which is normally one of the stormiest of the year. Not only was the number of days with gales in excess of the normal, but the abnormal pressure distribution during a protracted period when a deep depression covered the region usually occupied by the North Atlantic HIGH, with anticyclonic conditions over northern Europe and Iceland, was responsible for winds of hurricane force, accompanied by dangerous confused and cross seas. As shown by reports in table of gales and storms, lowest barometric readings of slightly over 28 inches were recorded. According to the press reports there were many casualties, and in a number of cases vessels were days late in reaching port. Storm reports from nearly 150 vessels have been received up to time of writing, a number of which are given in table.

As is usually the case during a stormy month, the number of days with fog was below the normal over the Grand Banks and steamer lanes, although reported on seven days along the American coast between Hatteras and New York, on three days in the western section of the Gulf of Mexico, and on three days in the square between the 30th and 35th parallels and the 50th and 55th meridians.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level, 8 a. m. (75th meridian), North Atlantic Ocean, December, 1927

Stations	Average pressure	Departure <sup>1</sup>	High-est	Date	Low-est	Date
	Inches	Inch	Inches		Inches	
Belle Isle.....	29.74	+0.04	30.44	8th.....	28.72	19th....
Halifax.....	29.92	-0.06	30.60	4th.....	28.90	20th....
Nantucket.....	30.00	-0.08	30.59	4th.....	29.28	14th....
Hatteras.....	30.11	-0.03	30.62	10th.....	29.54	16th....
Key West.....	30.08	-0.01	30.26	11th <sup>2</sup> .....	29.82	3d.....
New Orleans.....	30.17	+0.05	30.58	9th.....	29.76	12th....
Cape Gracias, Honduras.....	29.92	-0.06	30.00	25th.....	29.82	2d.....
Turks Island.....	30.09	+0.06	30.20	11th <sup>2</sup> .....	29.90	26th....
Bermuda.....	30.12	-0.03	30.62	11th.....	29.64	20th....
Horta, Azores.....	29.89	-0.22	30.42	3d.....	28.84	16th....
Lerwick, Shetland Islands.....	30.08	+0.36	30.80	28th.....	29.22	23d....
Valencia, Ireland.....	29.74	-0.20	30.53	28th.....	28.41	22d....
London.....	29.89	-0.13	30.52	28th.....	28.80	22d....

<sup>1</sup> From normals shown on H. O. Pilot Chart, based on observations at Greenwich mean noon, or 7 a. m. 75th meridian.

<sup>2</sup> And on other dates.

It is difficult to give a detailed description of the conditions, as storm after storm moved across the ocean in rapid succession and there was not a day when heavy weather was not reported from some locality.

From the 3d to 9th severe conditions prevailed over the middle and eastern sections of the steamer lanes, the storm area reaching its greatest extent on the 5th. On the 3d-4th strong gales also occurred in the vicinity of Hatteras.